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DYNAMICS EXPLORER 2
NEUT ATMOSPHERE COMPOSITION SPECTROMETER (NACS)
NEUTRAL CONC. OF O, N2, HE, N, AND ARGON DATA

81-070B-03C

[redacted]

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NEUT ATMOSPHERE COMPOSITION SPECTROMETER (NACS)
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This data set consists of 7 tapes, all 9-track, 6250 bpi, binary, and VAX labeled. The data are arranged one day per file. The tapes are are written in Standard Format Data Units (SFDU). Each tape contains a Volume Description File (VOLDESC.SFDU) and a Format File (FORMAT.SFD). The media numbers, labels and time spans follow:

LABEL	D NUMBER	C NUMBER	FILES	TIME SPAN
NACS01	D-080465	C-028018	746	08/08/81 - 11/15/81
NACS02*	D-080505	C-028019	683	11/16/81 - 01/19/82
NACS03	D-080506	C-028020	808	01/20/82 - 04/29/82
NACS04*	D-080507	C-028021	730	04/30/82 - 07/18/82
NACS05	D-080508	C-028022	796	07/19/82 - 10/16/82
NACS06*	D-080509	C-028023	644	10/17/82 - 12/31/82
NACS07	D-080510	C-028024	259	01/01/83 - 02/15.83

* These tapes contained zero-length files that made image copying unreliable. The files have been removed. Following is a list of the files that were removed.

NACS02	N13300940.DAT
	N13626810.DAT
NACS04	N21363400.DAT
NACS06	N23530530.DAT
	N23531900.DAT
	N23537150.DAT
	N23566130.DAT
	N23632380.DAT

CCSDYDNM000200NSSD0007SMRK0001
TYPE_OF_FILE_NAME: MAF AMBIENT DENSITIES
FILE_ATTRIBUTES: Variable length, sequential file, unformatted, with fixed length logical records
LOGICAL_RECORD_LENGTH: 24 bytes
TYPE_OF_FILE_DESCRIPTION:
Each file corresponds to an original Sigma 9 MAF file. Each logical record of the file has ambient densities averaged over one second. The data date is contained in the file name. File names are of the form Nydddsssc, where: the letter N is at the beginning of all files, y is the last digit of the year 1981 to 1983; ddd is the daycount (Jan 1 = 1); sss is the high order hundreds of seconds of the first data point (time=sss*100 sec); and c is 0 or other arbitrarily assigned integer to ensure unique file names.
FILE_STRUCTURE:
MAF files are written as VAX unformatted sequential with logical records of equal length.

FORMAT_OF_THE_LOGICAL_RECORD:

WORD NUMBER	FIELD NAME	TYPE I/R	DESCRIPTION
1	TIME	VR4	Universal time of day in milliseconds
2	DENSITY1	VR4	Atomic Oxygen density and percent error
3	DENSITY2	VR4	Molecular Nitrogen density and percent error
4	DENSITY3	VR4	Helium density and percent error
5	DENSITY4	VR4	Atomic Nitrogen density and percent error - not reliable data
6	DENSITY5	VR4	Argon density and percent error

The field names DENSITY1 through DENSITY5 refer to pairs of parameters whose values have been packed into DEC VAX 4-byte reals designated type VR4. Each pair of parameters consists of a density for the species indicated and an associated percentage statistical error (not including calibration error) of the measurement. The representations for the pair are as follows:

Density	Use the VR4 value directly to get the ambient density in units of #/cm**3. This is sufficiently accurate to ignore the presence of the Percent Error.
Percent Error	Extract the lower order 8 bits of the VR4 field and treat as an unsigned integer. Obtain this value, convert to a real, and divide by two to get a value that is the percentage statistical error.

FIELD_RELATIONSHIPS:
TIME_DENSITY: The time value from the TIME field corresponds to the mid-point of the one second time interval used to compute each density and percentage error given in a DENSITYx field.

CCSDYDNM000200NSSD0007EMRK0001

Sample dump

HEX DUMP OF N30010750.DAT

RECORD 1 [illegible] BYTES

(0) [illegible] 7400214F 05306E4D 0CF4214C 04F20000 0000B447 33CE

HEX DUMP OF N30010750.DAT

RECORD 26 [illegible] BYTES

(0) 030[illegible] 7400194F 050C6D4D 0CED194C 0444A54C 1075BB47 2A49

HEX DUMP OF N30465730.DAT

RECORD 1 [illegible] BYTES

(0) 0304E507 72032A4F 05D38E4E 0847BA4B 07880000 00006449 07B1

HEX DUMP OF N30465730.DAT

RECORD 1244 [illegible]6 BYTES

(0) 03000051 85033C50 05345C4F 06B754AC 074A814C 4DF4274A 055C